

Amendments to the Claims

Claims 1-15. (canceled)

16. (currently amended) ~~The method of claim 13~~ In a computer having object-execution system code, a method of managing execution of software components in an object execution environment, wherein a software component instance is one of a set of ancestor/descendent-related software components, each of which being created in turn at request of its respective immediate ancestor software component of the set commencing with an original ancestor software component originally created at request of a base client, and wherein the set of properties comprises a client identifier indicative of the base client, and wherein each software component of the set of ancestor/descendent-related software components has a respective component context object whose properties are inherited based on those of a third component context object implicitly associated to the original ancestor software component, and wherein the set of properties of the third component context object comprises a transaction reference indicative of a transaction encompassing data processing work of the set of ancestor/descendent-related software components, the method further comprising:

supporting an object execution environment from a system-provided run-time executive; responsive to a request from an immediate client to the run-time executive to create the software component instance in the object execution environment,

creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

supplying to the immediate client a reference to the requested software component instance, and

maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;

setting the properties in the component context object of the requested software component instance based on those of a second component context object associated with the immediate ancestor software component for the requested software component instance;

exposing an interface of the third component context object to the original ancestor software component, the component context object interface having a set complete indication method member and a set abort indication method member for invocation by the original ancestor software component, where the invocation of the set complete indication method member by the original ancestor software component is indicative of the set's data processing work being in a complete condition in which the transaction can be committed, and where the invocation of the set abort method member by the original ancestor software component is indicative of the set's data processing work being in a complete condition in which the transaction cannot properly be committed;

invoking by the requested software component instance specific an appropriate one of the set complete indication or set abort indication method member of the third component context object interface prior to return from data processing work in the transaction that indicates the data processing work's condition;

where the set complete indication method member is invoked by the original ancestor software component prior to return from the data processing work, automatically attempting committal of the transaction without explicit programming instruction of the immediate client; and

where the set abort indication method member is invoked by the original ancestor software component prior to return from the data processing work, automatically aborting the transaction without explicit programming instruction of the immediate client;

wherein the method is computer implemented.

17. (original) The method of claim 16 further comprising, responsive to the invocation of the appropriate one method member by the original ancestor software component prior to return from the data processing work, deactivating the original ancestor software component.

Claims 18-21. (canceled)

22. (currently amended) ~~The method of claim 20 further comprising:~~In a computer having object-execution system code, a method of managing execution of software components in an object execution environment, the method comprising:
supporting an object execution environment from a system-provided run-time executive;
and
responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,
creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code wherein the set of properties comprises a transaction reference indicative of a transaction encompassing data processing work of the requested software component instance,
supplying to the immediate client a reference to the requested software component instance, and
maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;
exposing an interface of the component context object to the requested software component instance, the component context object interface having a plurality of method members for invocation by the requested software component instance to indicate a condition of the data processing work by the requested software component instance in the transaction; and
invoking by the requested software component instance specific of the method members of the component context object interface prior to return from data processing work in the transaction to indicate the data processing work's condition;
wherein the method is computer implemented.

23. (original) The method of claim 22 wherein the method members of the component context object comprise a set complete indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a complete condition in which the transaction can be committed.

24. (original) The method of claim 23 further comprising, responsive to invocation of the set complete indication method member by the requested software component instance prior to return from the data processing work, deactivating the requested software component instance.

25. (original) The method of claim 23 further comprising, responsive to invocation of the set complete indication method member by the requested software component instance prior to return from the data processing work, automatically attempting committal of the transaction without explicit programming instruction of the immediate client.

26. (original) The method of claim 22 wherein the method members of the component context object comprise a set abort indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a complete condition in which the transaction cannot properly be committed.

27. (original) The method of claim 26 further comprising, responsive to invocation of the set abort indication method member by the requested software component instance prior to return from the data processing work, deactivating the requested software component instance.

28. (original) The method of claim 26 further comprising, responsive to invocation of the set abort indication method member by the requested software component instance prior to return from the data processing work, automatically aborting the transaction without explicit programming instruction of the immediate client.

29. (original) The method of claim 22 wherein the method members of the component context object comprise a commit enabling indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a possibly incomplete condition in which the transaction can still properly be committed.

30. (original) The method of claim 29 further comprising, upon an attempt to commit the transaction at a time after the requested software component instance invokes the commit enabling indication method member, allowing the transaction to commit unless a condition of processing work by other than the requested software component instance causes an abort of the transaction.

31. (original) The method of claim 22 wherein the method members of the component context object comprise a commit disabling indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a possibly incomplete condition in which the transaction cannot properly be committed.

32. (original) The method of claim 31 further comprising, upon an attempt to commit the transaction at a time after the requested software component instance invokes the commit disabling indication method member, causing the transaction to abort.

Claims 33-35. (canceled)

36. (currently amended) ~~The method of claim 33 further comprising~~ In a computer having object-execution system code, a method of managing execution of software components in an object execution environment, the method comprising:

supporting an object execution environment from a system-provided run-time executive;
and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

supplying to the immediate client a reference to the requested software component instance, and

maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;
setting the properties in the component context object of the requested software component instance based on those in a second component context object wherein the second component context object is associated with the immediate client executing in the object execution environment; and

issuing by the immediate client a method invocation to a create instance method member of an interface supported on the second component context object to thereby request creation of the requested software component instance;

wherein the method is computer implemented.

Claims 37-38. (canceled)

39. (currently amended) ~~The method of claim 1~~ In a computer having object-execution system code, a method of managing execution of software components in an object execution environment wherein the computer further has a security facility requiring a user to log-on under one of a plurality of user identities configured on the respective computer system, at least some of the software components in the object execution environment form at least part of a component-based application program having defined therein a set of abstract user classes and access privileges of the abstract user classes, the computer having an administrative configuration associating the user identities to the abstract user classes and having an access control for enforcing access limitation of a user whose user identity is associated in any of the abstract user classes to the access privileges of the associated abstract user class, the method further comprising:

supporting an object execution environment from a system-provided run-time executive;
and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing

execution of the requested software component instance within the object execution environment by system-provided code,
supplying to the immediate client a reference to the requested software component instance, and
maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;
exposing an interface of the component context object to the requested software component instance, the component context object interface having a method member for programmatically querying whether a caller is executing on behalf of a user associated in a specified abstract user class; and
in response to invocation of the method member by the requested software component instance which invocation specifies a particular abstract user class, returning an indication of whether a caller of the requested software component instance executes on behalf of a user associated in the particular abstract user class;
wherein the method is computer implemented.

40. (original) The method of claim 39 wherein the access control can be selectively enabled to enforce the access limitation with respect to any software component of the object execution environment, the exposed interface of the component context object also having a further method member for querying whether the access control is enabled with respect to the requested software component instance, the method further comprising:

in response to invocation of the further method member by the requested software component instance, returning an indication of whether the access control is enabled with respect to the requested software component instance.

Claims 41-44. (canceled)

45. (currently amended) ~~The software component execution runtime executive of claim 41 further comprising:~~ In a computer, a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive comprising:

program code supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment;

program code operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client;

program code for maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance; and

program code implementing an interface of the component context object exposed to the requested software component instance, the interface having a transaction completion indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work has been successfully completed;

wherein program code is computer executed.

46. (original) The software component execution runtime executive of claim 45 further comprising:

program code operating responsive to the invocation of the transaction completion indication method member by the requested software component instance to deactivate the requested software component instance upon the requested software component instance's return from the data processing work.

47. (original) The software component execution runtime executive of claim 45 further comprising:

program code operating responsive to the invocation of the transaction completion indication method member by the requested software component instance to initiate a commit phase of transactional processing involving the data processing work of the requested software component instance.

48. (currently amended) ~~The software component execution runtime executive of claim 41 further comprising:~~ In a computer, a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive comprising:

program code supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment;

program code operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client;

program code for maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance; and

program code implementing an interface of the component context object exposed to the requested software component instance, the interface having a transaction abort indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work has been unsuccessfully completed;

wherein program code is computer executed.

49. (original) The software component execution runtime executive of claim 48 further comprising:

program code operating responsive to the invocation of the transaction abort indication method member by the requested software component instance to deactivate the requested software component instance upon the requested software component instance's return from the data processing work.

50. (original) The software component execution runtime executive of claim 48 further comprising:

program code operating responsive to the invocation of the transaction abort indication method member by the requested software component instance to initiate an abort phase of transactional processing involving the data processing work of the requested software component instance.

51. (currently amended) ~~The software component execution runtime executive of claim 41 further comprising:~~ In a computer, a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive comprising:

program code supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment;

program code operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client;

program code for maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance; and

program code implementing an interface of the component context object exposed to the requested software component instance, the interface having a transaction disable indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work should not be committed pending further processing;

wherein program code is computer executed.

52. (original) The software component execution runtime executive of claim 51 further comprising:

program code operating responsive to the invocation of the transaction disable indication method member by the requested software component instance to disable transactional processing involving the data processing work of the requested software component instance from committal.

53. (original) The software component execution runtime executive of claim 51 wherein the interface further has a transaction enable indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work can be committed, the software component execution runtime executive further comprising:

program code operating responsive to the invocation of the transaction enable indication method member by the requested software component instance to again enable transactional processing involving the data processing work of the requested software component instance to commit.

54. (currently amended) ~~The software component execution runtime executive of claim 41 further comprising:~~ In a computer, a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive comprising:

program code supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment;

program code operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client;

program code for maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance;

program code implementing an interface of the component context object exposed to the requested software component instance, the interface having a query transaction participation method member for invocation by the requested software component instance; and

program code operating responsive to the invocation of the query transaction participation method member by the requested software component instance to provide information back to the requested software component instance whether data processing work of the requested software component instance forms part of a transaction;

wherein program code is computer executed.

55. (currently amended) ~~The software component execution runtime executive of claim 41 further comprising:~~ In a computer, a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive comprising:

program code supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to

managing execution of the accompanied individual software component instance within the object execution environment;

program code operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client;

program code for maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance;

program code implementing an interface of the component context object exposed to the requested software component instance, the interface having a query role membership method member for invocation by the requested software component instance to programmatically control access; and

program code operating responsive to the invocation of the query role membership method member by the requested software component instance to provide information back to the requested software component instance indicative of whether a user on whose behalf the requested software component instance is executing is associated in a specified role, wherein the role is an abstract class of users defined for a component-based application program and associated to user identities employed in a security facility of the computer;

wherein program code is computer executed.

Claims 56-61. (canceled)

Claims 62-68. (previously canceled)

Claims 69-83. (canceled)

84. (currently amended) ~~The computer system of claim 81~~ In a computer system having object-execution system code managing execution of software components in an object execution environment, the computer system comprising:

means for supporting an object execution environment from a system-provided run-time executive; and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

means for creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

means for supplying to the immediate client a reference to the requested software component instance, and

means for maintaining by the run-time executive an implicit association of the component context object to the requested software component instance wherein the software component instance is one of a set of ancestor/descendent-related software components, each of which being created in turn at request of its respective immediate ancestor software component of the set commencing with an original ancestor software component originally created at request of a base client, and wherein the set of properties comprises a client identifier indicative of the base client;

means for setting the properties in the component context object of the requested software component instance based on those in the second component context object wherein a second component context object is associated with the immediate ancestor software component for the requested software component instance, and wherein each software component of the set of ancestor/descendent-related software components has a respective component context object whose properties are inherited based on those of a third component context object implicitly associated to the original ancestor software component, and wherein the set of properties of the third component context object comprises a transaction reference indicative of a transaction encompassing data processing work of the set of ancestor/descendent-related software components~~the computer system further comprising:~~

means for exposing an interface of the third component context object to the original ancestor software component, the component context object interface having a set complete indication method member and a set abort indication method member for invocation by the original ancestor software component, where the invocation of the set complete indication

method member by the original ancestor software component is indicative of the set's data processing work being in a complete condition in which the transaction can be committed, and where the invocation of the set abort method member by the original ancestor software component is indicative of the set's data processing work being in a complete condition in which the transaction cannot properly be committed;

means for invoking by the requested software component instance specific an appropriate one of the set complete indication or set abort indication method member of the third component context object interface prior to return from data processing work in the transaction that indicates the data processing work's condition;

where the set complete indication method member is invoked by the original ancestor software component prior to return from the data processing work, automatically attempting committal of the transaction without explicit programming instruction of the immediate client; and

where the set abort indication method member is invoked by the original ancestor software component prior to return from the data processing work, automatically aborting the transaction without explicit programming instruction of the immediate client;

wherein said means are computer implemented.

85. (previously presented) The computer system of claim 84 further comprising, responsive to the invocation of the appropriate one method member by the original ancestor software component prior to return from the data processing work, means for deactivating the original ancestor software component.

Claims 86-89. (canceled)

90. (previously presented) ~~The computer system of claim 88 further comprising:~~ In a computer system having object-execution system code managing execution of software components in an object execution environment, the computer system comprising:

means for supporting an object execution environment from a system-provided run-time executive; and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

means for creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

means for supplying to the immediate client a reference to the requested software component instance, and

means for maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;

means for exposing an interface of the component context object to the requested software component instance, the component context object interface having a plurality of method members for invocation by the requested software component instance to indicate a condition of the data processing work by the requested software component instance in the a transaction; and

means for invoking by the requested software component instance specific of the method members of the component context object interface prior to return from data processing work in the transaction to indicate the data processing work's condition wherein the set of properties comprises a transaction reference indicative of the transaction encompassing data processing work of the requested software component instance;

wherein said means are computer implemented.

91. (previously presented) The computer system of claim 90 wherein the method members of the component context object comprise a set complete indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a complete condition in which the transaction can be committed.

92. (previously presented) The computer system of claim 91 further comprising, responsive to invocation of the set complete indication method member by the requested

software component instance prior to return from the data processing work, means for deactivating the requested software component instance.

93. (previously presented) The computer system of claim 91 further comprising, responsive to invocation of the set complete indication method member by the requested software component instance prior to return from the data processing work, means for automatically attempting committal of the transaction without explicit programming instruction of the immediate client.

94. (previously presented) The computer system of claim 90 wherein the method members of the component context object comprise a set abort indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a complete condition in which the transaction cannot properly be committed.

95. (previously presented) The computer system of claim 94 further comprising, responsive to invocation of the set abort indication method member by the requested software component instance prior to return from the data processing work, means for deactivating the requested software component instance.

96. (previously presented) The computer system of claim 94 further comprising, responsive to invocation of the set abort indication method member by the requested software component instance prior to return from the data processing work, means for automatically aborting the transaction without explicit programming instruction of the immediate client.

97. (previously presented) The computer system of claim 90 wherein the method members of the component context object comprise a commit enabling indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a possibly incomplete condition in which the transaction can still properly be committed.

98. (previously presented) The computer system of claim 97 further comprising, upon an attempt to commit the transaction at a time after the requested software component instance invokes the commit enabling indication method member, means for allowing the transaction to commit unless a condition of processing work by other than the requested software component instance causes an abort of the transaction.

99. (previously presented) The computer system of claim 90 wherein the method members of the component context object comprise a commit disabling indication method member, the invocation of which by the requested software component instance is indicative of the requested software component instance's data processing work being in a possibly incomplete condition in which the transaction cannot properly be committed.

100. (previously presented) The computer system of claim 99 further comprising, upon an attempt to commit the transaction at a time after the requested software component instance invokes the commit disabling indication method member, causing the transaction to abort.

Claims 101-103. (canceled)

104. (previously presented) ~~The computer system of claim 101 further comprising~~ In a computer system having object-execution system code managing execution of software components in an object execution environment, the computer system comprising:

means for supporting an object execution environment from a system-provided run-time executive; and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

means for creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

means for supplying to the immediate client a reference to the requested software component instance, and

means for maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;

means for setting the properties in the component context object of the requested software component instance based on those in the second component context object; and

means for issuing by the immediate client a method invocation to a create instance method member of an interface supported on the a second component context object to thereby request creation of the requested software component instance wherein the second component context object is associated with the immediate client executing in the object execution environment;

wherein said means are computer implemented.

Claims 105-106. (canceled)

107. (previously presented) ~~The computer system of claim 69 wherein the computer further has~~ In a computer system having object-execution system code managing execution of software components in an object execution environment, a security facility requiring a user to log-on under one of a plurality of user identities configured on the respective computer system, at least some of the software components in the object execution environment form at least part of a component-based application program having defined therein a set of abstract user classes and access privileges of the abstract user classes, the computer having an administrative configuration associating the user identities to the abstract user classes and having an access control for enforcing access limitation of a user whose user identity is associated in any of the abstract user classes to the access privileges of the associated abstract user class, the computer system further comprising:

means for supporting an object execution environment from a system-provided run-time executive; and

responsive to a request from an immediate client to the run-time executive to create a software component instance in the object execution environment,

means for creating a component context object having stored therein a set of properties intrinsic to the requested software component instance and relating to managing execution of the requested software component instance within the object execution environment by system-provided code,

means for supplying to the immediate client a reference to the requested software component instance, and

means for maintaining by the run-time executive an implicit association of the component context object to the requested software component instance;

means for exposing an interface of the component context object to the requested software component instance, the component context object interface having a method member for programmatically querying whether a caller is executing on behalf of a user associated in a specified abstract user class; and

in response to invocation of the method member by the requested software component instance which invocation specifies a particular abstract user class, means for returning an indication of whether a caller of the requested software component instance executes on behalf of a user associated in the particular abstract user class;

wherein said means are computer implemented.

108. (previously presented) The computer system of claim 107 wherein the access control can be selectively enabled to enforce the access limitation with respect to any software component of the object execution environment, the exposed interface of the component context object also having a further method member for querying whether the access control is enabled with respect to the requested software component instance, the computer system further comprising:

in response to invocation of the further method member by the requested software component instance, means for returning an indication of whether the access control is enabled with respect to the requested software component instance.

Claims 109-112. (canceled)

113. (currently amended) ~~The computer system of claim 109, wherein the method performed by the runtime executive further comprises~~ In a computer system comprising:

a digital processor;

volatile and non-volatile memory coupled to the digital processor; and

the memory having program code for executing on the digital processor, the program code comprising,

software components,

a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive performing a method comprising,

supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment,

operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client,

maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance, and

implementing an interface of the component context object exposed to the requested software component instance, the interface having a transaction completion indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work has been successfully completed.

114. (previously presented) The computer system of claim 113, wherein the method performed by the runtime executive further comprises operating responsive to the invocation of the transaction completion indication method member by the requested software component instance to deactivate the requested software component instance upon the requested software component instance's return from the data processing work.

115. (previously presented) The computer system of claim 113, wherein the method performed by the runtime executive further comprises operating responsive to the invocation of the transaction completion indication method member by the requested software component instance to initiate a commit phase of transactional processing involving the data processing work of the requested software component instance.

116. (currently amended) ~~The computer system of claim 109, wherein the method performed by the runtime executive further comprises~~ In a computer system comprising:

a digital processor;

volatile and non-volatile memory coupled to the digital processor; and

the memory having program code for executing on the digital processor, the program code comprising,

_____ software components,

a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive performing a method comprising,

supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment,

operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component

context object to accompany the requested software component instance and to return
a requested software component instance reference back to the immediate client,
maintaining an implicit association of the created component context object
with the requested software component instance throughout a lifetime of the
requested software component instance, and

implementing an interface of the component context object exposed to the
requested software component instance, the interface having a transaction abort
indication method member for invocation by the requested software component
instance prior to return from data processing work for the immediate client to provide
an indication to the software component execution runtime executive that the data
processing work has been unsuccessfully completed.

117. (previously presented) The computer system of claim 116, wherein the method
performed by the runtime executive further comprises operating responsive to the invocation of
the transaction abort indication method member by the requested software component instance to
deactivate the requested software component instance upon the requested software component
instance's return from the data processing work.

118. (previously presented) The computer system of claim 116, wherein the method
performed by the runtime executive further comprises operating responsive to the invocation of
the transaction abort indication method member by the requested software component instance to
initiate an abort phase of transactional processing involving the data processing work of the
requested software component instance.

119. (currently amended) ~~The computer system of claim 109, wherein the method
performed by the runtime executive further comprises~~ In a computer system comprising:
a digital processor;
volatile and non-volatile memory coupled to the digital processor; and
the memory having program code for executing on the digital processor, the program
code comprising,
software components,

a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive performing a method comprising,

supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment,

operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client,

maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance, and

implementing an interface of the component context object exposed to the requested software component instance, the interface having a transaction disable indication method member for invocation by the requested software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work should not be committed pending further processing.

120. (previously presented) The computer system of claim 119, wherein the method performed by the runtime executive further comprises operating responsive to the invocation of the transaction disable indication method member by the requested software component instance to disable transactional processing involving the data processing work of the requested software component instance from committal.

121. (previously presented) The computer system of claim 119, wherein the interface further has a transaction enable indication method member for invocation by the requested

software component instance prior to return from data processing work for the immediate client to provide an indication to the software component execution runtime executive that the data processing work can be committed, the method performed by the runtime executive further comprising operating responsive to the invocation of the transaction enable indication method member by the requested software component instance to again enable transactional processing involving the data processing work of the requested software component instance to commit.

122. (currently amended) ~~The computer system of claim 109, wherein the method performed by the runtime executive further comprises:~~ In a computer system comprising:
a digital processor;
volatile and non-volatile memory coupled to the digital processor; and
the memory having program code for executing on the digital processor, the program code comprising,
_____ software components,
a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive performing a method comprising,
supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment,
operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client, and
maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance,

implementing an interface of the component context object exposed to the requested software component instance, the interface having a query transaction participation method member for invocation by the requested software component instance; and

operating responsive to the invocation of the query transaction participation method member by the requested software component instance to provide information back to the requested software component instance whether data processing work of the requested software component instance forms part of a transaction.

123. (currently amended) ~~The computer system of claim 109, wherein the method performed by the runtime executive further comprises:~~ In a computer system comprising:

a digital processor;

volatile and non-volatile memory coupled to the digital processor; and

the memory having program code for executing on the digital processor, the program code comprising,

_____ software components,

a software component execution runtime executive for providing services to support execution of software components in an object execution environment, the runtime executive performing a method comprising,

supplying an implementation of component context objects for accompanying individual instances of the software components executing in the object execution environment, the component context objects having stored therein a set of context properties intrinsic to their respective accompanied individual software component instance and relating to managing execution of the accompanied individual software component instance within the object execution environment,

operating responsive to a request of an immediate client for creation of an instance of a request-specified software component to cause creation of a component context object to accompany the requested software component instance and to return a requested software component instance reference back to the immediate client, and

maintaining an implicit association of the created component context object with the requested software component instance throughout a lifetime of the requested software component instance,

implementing an interface of the component context object exposed to the requested software component instance, the interface having a query role membership method member for invocation by the requested software component instance to programmatically control access; and

operating responsive to the invocation of the query role membership method member by the requested software component instance to provide information back to the requested software component instance indicative of whether a user on whose behalf the requested software component instance is executing is associated in a specified role, wherein the role is an abstract class of users defined for a component-based application program and associated to user identities employed in a security facility of the computer.

Claims 124-129. (canceled)